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**BIBLIOGRAPHY ON COMPRESSION
IGNITION ENGINE LOW
TEMPERATURE PROBLEMS**

By W. E. MEYER

2nd Edition, 1962

Contract DA-36-034-ORD-3199RD

Army Tank Automotive Center



THE PENNSYLVANIA STATE UNIVERSITY

Department of Mechanical Engineering

University Park, Pennsylvania

BIBLIOGRAPHY
ON
COMPRESSION IGNITION ENGINE
LOW TEMPERATURE PROBLEMS

by
W. E. Meyer

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INDEX VOLUME

Prepared under
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for

Army Tank Automotive Center
Detroit Arsenal
Center Line, Michigan

Department of Mechanical Engineering
The Pennsylvania State University
University Park Pennsylvania

BIBLIOGRAPHY ON COMPRESSION IGNITION ENGINE LOW TEMPERATURE PROBLEMS

Introduction

This bibliography consists of this index volume and a set of abstract cards. This second edition is a complete and thorough revision of the first edition. The scope of the bibliography remains unchanged, but its interpretation is slightly different in that it is more rigorous. The bibliography deals with all aspects of low temperature (or cold weather) operation of compression ignition engines. It lies in the nature of the subject that the literature on it deals heavily with the starting problem.

The bibliography grew out of the literature collection and reviews made by the author and his colleagues at the Pennsylvania State University during many years of research on the cold starting of compression ignition engines. The first edition was built directly on this collection, although some references of obviously marginal applicability were omitted. The revision procedure consisted in examining every included reference and its abstract before accepting it for the second edition. In this process many references were deleted and a large number of abstracts revised to fit them better to the purpose of a general bibliography of a diversified subject area. At the same time an approximately equal number of references were added, not only from the current literature, but also from that of earlier years (though principally of the last five years).

Scope of the Bibliography

The general scope of the bibliography is given by the title, but the title does not define sharply what is to be included and what not. In this revised edition a large number of older references have been omitted if they were no longer considered to be of value to the researcher and engineer in this field. An exception was made only in cases in which a reference contains fundamental information or historically significant material.

The emphasis was placed more specifically on technically significant material. This led to the omission of references dealing with the subject in only general terms or reporting poorly documented experiments or field tests. On the other hand many research papers, articles and reports have been added even if their applicability to the subject area is marginal. Thus it is hoped that the bibliography will not only lead its user to references directly applicable to current problems, but that it will provide a stimulus to attempt new approaches and intensified research on problems that in the past have been dealt with empirically only.

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Identification of Index Entries

The indices contain all, and only, references for which abstract cards were prepared and issued. Each card carries at the top an identifier line and this is used to identify the reference in the indices.

The identifier line list in the following order:

1. Author (or authors, but if more than two only the first named author is given). In case of anonymous articles the name of the journal is listed in the author column.

Reports by government agencies or by firms reporting on work carried out under contract with a government agency are entered into the author column by the name of the agency or firm responsible for the contents of the report.

2. Month and year of publication or release.
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4. Document number (AD or TIP) under which the report or article may be obtained from ASTIA by government agencies or contractors with an established "Need to Know". Where a PB number appears in this column this indicates that the document may be purchased from the Office of Technical Services of the U. S. Department of Commerce, identifying it by this number. (This information is omitted in the Author Index.)
5. The subject classification. For key to the symbols see the first page of the Subject Index. (The symbols appear in the Subject Index as headings).

Abstract Cards

The abstract cards contain full details on each reference, including complete title, information on condensations appearing elsewhere, availability of translations, etc. as well as an abstract. In instances in which the article or report deals partially or principally with subject matter outside the scope of the bibliography the abstract so indicates, but otherwise concentrates on the information pertaining to the subject area of low temperature operation of compression ignition engines.

The complete set of abstract cards consists of 318 cards. The set may be obtained by agencies of the Department of Defense by addressing

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University Park, Pennsylvania
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NCER & E Lab	May 52	Tech Note N-089	CE
NCER & E Lab	Sep 53	Tech Note N-163	DG
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Bryan et al	1961	SAE Trans	MM
NEES	Feb 55	Rept 020035	CH
Nelson, F L, see			
Smolak & Nelson	Aug 48	Pet Refiner	FF
Nelson, F L			
Nelson & Ulzheimer	Mar 50	SAE J1	AA
Nelson, W L	Oct 56	Oil & Gas J1	FP
Netzel, see			
Midw Res Inst	May 61	ASD Tech Rept 61-280	FP
Newingham & Ziegler	Feb 62	Lub Eng	CF, LL
Nicad Batt Corp	Dec 57	Final Rept	CE
NOL Corona	Jan 58	NAVORD Rept 394	CE
NRC (Canada)	Nov 49	Rept MO 1490	FS
NRL Wash	Jan 50	Rept 3604	FS
Nussdorfer, see			
Shaw & Nussdorfer	1946	NACA TR850	LF, MP
O'Connor, see			
NRC (Canada)	Nov 49	Rept MO 1490	FS
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Levin & Ogloblin	1952	ATIC-293047	GS
Oil Engine	Jul 55	Oil Engine	AA
Oil Engine	Jan 56	Oil Engine	CH
Oil Engine	Nov 59	Oil Engine	AI
Oil Engine	Jan 60	Oil Engine	LF
Oil Engine	Nov 60	Oil Engine	FS
Okrent	Apr 61	ASLE Trans	LL, MW
Overbye et al	1961	SAE Trans	MH
Pelizzoni	Mar 43	SAE Trans	AI
Penn State U	Aug 48	NOrd 7948	LL, LP
Penn State U	Jun 54	DA-44-009-Eng-765	CF
Penn State U	Sep 55	DA-44-009-Eng-1041	AA, AS
Penn State U	Jun 56	DA-44-009-Eng-765	CF
Penn State U	Jan 59	DA-44-009-Eng-3122	CF, MI, FI
Penn State U	Oct 59	DA-36-061-ORD-610	GS
Penn State U	Oct 59	DA-44-009-Eng-3123	AA, FI
Penn State U	1961	DA-36-034-ORD-3199RD	GB
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BIOS	1947	Rept 1712	AA, AF

Pfeifer, see			
Detroit Arsenal	Apr 61	Rept 5008	DC
Pischinger, A, see			
Pischinger & Pischinger	Jan 59	MTZ (Ger)	FI
Pischinger, F			
Pischinger & Pischinger	Jan 59	MTZ(Ger)	FI
Pitchford	Jan 55	Chart ME	AA
Pollock, see			
Midw Res Inst	May 61	ASD Tech Rept 61-280	FP
Popa, see			
Barbatu et al	Nov 58	Petrol si Gaze (Rum)	FP
Porter, H R	Oct 43	SAE Trans	AA, FF
Porter, R S			
Porter & Johnson	Aug 61	ASNE J1	LP
Powell	Jan 50	Ordnance	GR
Pratt	1959	IME(AD)Proc	LG, LL
Prothero	Oct 60	SAE Prept	GG
Pueschner, see			
Detroit Arsenal	Aug 51	Rept 1150	DC
Pye, see			
Tyzard & Pye	1922	Phil Mag	FF, FP
Qualey	May 52	R & D Board Sym	FP
R & D Board	May 52	Sym Proc	GR
Raviolo	Apr 50	SAE Trans	LL
Reichhelm	Jun 55	DA-44-009-Eng-1154	AF
Reynolds, see			
Detroit Arsenal	Apr 58	Rept 4122	FS
Riegels	Jun 50	Aut Ind	FF
Ringer	May 52	R & D Board Sym	CP
Rixman	1941	Krftforsch (Ger)	FF
Rock Isld Arsl	Jul 53	Lab Rept 53260	LD
Roensch	Aug 43	SAE Trans	FS
Rogowski	Aug 61	SAE J1	LF, MP
Romans, see			
Murphy et al	Jul 49	ASME Trans	HP, LP
Rowland	Jun 54	SAE J1	AF
Royal Can Af	Aug 56	CEPE Rept 1202	MG
Ruf	Oct 57	Motorlastw (SW)	FF, FP
Ruf	Oct 58	Motorlastw	FS, FP
Ruf, see			
Brunner & Ruf	1959	IME(AD)Proc	FF, FS
Russell	Jun 60	Austr Engr	GR
Ryan	May 52	R & D Board Sym	AE, DC
Ryder	Aug 50	SAE J1	DC
SAE CIMTC Sub XV	Dec 56	SAE J1	GR

SAE CIMTC Sub XV	Aug 60	Rept 4	MG
SAE ISTC	May 59	SAE HS-169	MM
Santoleri, see			
Therm Res & Eng	Jun 60	DA-36-034-ORD-2727RD DC	
Saunders, see			
Murphy & Saunders	May 47	Pet Refiner	FP, LP
Schaub	1941	Krftforsch (Ger)	FI, MP
Schmitz, see			
Hammerich	Jan 57	Brstoff-Chem (Ger)	LP
Schrock & Starkman	Jul 57	Lub Eng	LP
Schwab, see			
Aberdeen Prov Gr	Aug 59	DPS Rept 509	GR
Schwaiger	1937	Oel & Kohle (Ger)	LL, LP
Schweitzer	Oct 46	Diesel Power	AA
Scie Lubr	Jun 58	Scie Lubr	MG
Scott, see			
NCEL	Dec 59	Rept 058	CH
Scurlock, see			
Atl Res Corp	Sep 49	N9onr-86401	GS
Scurlock, see			
Sloan et al	Jun 51	SAE J1	GS
Seifert	Mar 59	MTZ (Ger)	HG
Selby, see			
Malone & Selby	1956	SAE Trans	CF, LL
Selby	1958	ASLE Trans	LL, LP
Selby	May 60	ASLE Trans	CF
Selby	Nov 61	SAE Prept	LL
Semenido et al	1960	NTS (Russia)	LL, LP
Senn, see			
NCER & E Lab	May 52	Tech Note N-089	CE
Sharapov, see			
Semenido et al	1960	NTS (Russia)	LL, LP
Shaw & Nussdorfer	1946	NACA TR850	LF, MP
Shaw	Dec 60	SAE J1	GG
Shchegolev, see			
Semenido et al	1960	NTS (Russia)	LL, LP
Shea, see			
ASTIA	56/58	Biblio	GB
Shimizu, see			
Burrows et al	1961	SAE Trans	MI
Shimkin	Feb 48	Aut Ind	AI, DC
Shoemaker & Gadebusch	Jan 46	Oil & Gas J1	AA, FF
Sieland	May 52	R & D Board Sym	DC, DE
Sig Corp Engg Lab	Jan 52	Tech Memo 1418	AA
Sirotna, see			
Kopylov & Sirotna	1962	Mosc Av Inst (Russia)	FP
Skoglund, see			
Kohl & Skoglund	Oct 61	ASTM-API Sym	LL

Sloan, see			
Atl Res Corp	Sep 49	N9onr-86401	GS
Sloan et al	Jun 51	SAE J1	GS
Smith, J H	1959	Comb Eng Prog	GG
Smith, J R, see			
Willard Batt Co	Jan 49	W33-019-ORD-6323	CE
Smolak & Nelson	Aug 48	Pet Refiner	FF
Spitler, see			
SAE CIMTC Sub XV	Dec 56	SAE J1	GR
Stanley, see			
Meyer et al	1955	SAE Trans	CF, LL
Starkman, see			
Schrock & Starkman	Jul 57	Lub Eng	LP
Stefanides	Jan 62	Design News	CE
Steidler, see			
Horowitz et al	1959	Wrld Pet Congr Proc	LF
Stevenson, see			
Ethyl Corp	Oct 55	Rept ER-360	FF
Stinson	1959	Diesel Publ	GG
Stoll, see			
Hammerich & Stoll	Mar 51	Erdoel & Kohle (Ger)	FP
Straetmanns & Jenkinson	Mar 59	Erdoel & Kohle (Ger)	FS
Summerson, see			
Conrad et al	Jan 62	SAE J1	DC
Swire, see			
Cavlin et al	Oct 53	Ind & Eng Chem	LF
SW Res Inst	Dec 55	DA-23-072-ORD-836	CE
SW Res Inst	Apr 56	DA-23-072-ORD-836	GB, GS
SW Res Inst	May 61	DA-23-072-ORD-1221	MG
Taylor, see			
Livengood	1958	SAE Trans	MI
Tenney	May 52	R & D Board Sym	DC
Therm Res & Eng	Jun 60	DA-36-034-ORD-2727RD	DC
Thiery	Oct 59	Scie Lub	MW
Tingle, see			
BIOS	Oct 47	Rept 1610	LP
Townsend, see			
ATB	Apr 60	ATB2-200	DC
Townsend, see			
ATB	May 60	ATB2859	MG
Traino	Aug 53	Aut Ind	AE
Tsao et al	Jan 61	SAE Prept 272B	FI, MI
Tutwiler, see			
Fischel et al	1956	SAE Trans	LL
Tweedy, see			
Walter	Nov 60	SAE J1	AA
Tyson, see			
Jones & Tyson	Jun 52	J1 Coleoid Sci	LP

Tyzard & Pye	1922	Phil Mag	FF, FP
U of Wichita	Mar 54	DA-44-109-QM-982	DC
U of Minn	Mar 54	DA-44-009-Eng-1042	FS, HS, LS
U of Wis	Dec 57	DA-44-009-Eng-2138	DC
Ulzheimer, see			
Nelson & Ulzheimer	Mar 50	SAE J1	AA
Uyehara, see			
Overbye et al	1961	SAE Trans	MH
Uyehara, see			
Tsao et al	Jan 61	SAE Prept 272B	FI, MI
VanNess, see			
Espenschade et al	Oct 52	SAE Trans	GG
Verdura, see			
Selby et al	Nov 61	SAE Prept	LL
Vermillion	May 52	R & D Board Sym	FF
Vick, see			
Horowitz & Vick	1962	SAE Trans	LL, LP
Villemard	Apr 54	SIA J1 (Fr)	CM
VonEberhorst, C E, see			
Fetzer & VonEberhorst	Jul 61	ATZ (Ger)	CF, LL
VonEberhorst, R M E	1959	Wrld Pet Congr Proc	GR
Vozzhinshaya, see			
Zherdeva et al	Feb 46	Petroleum	LP
Vyehara, see			
Chen et al	1954	SAE Trans	MI
Vyehara, see			
Burrows et al	1961	SAE Trans	MI
Walter	Nov 60	SAE J1	AA
Weider, see			
Jones & Weider	Apr 44	SAE J1	GR
Weisel, see			
Fleming et al	Jun 50	SAE J1	LL, LP
Wenck	Jan 49	ATZ (Ger)	LD
Wexler	May 52	R & D Board Sym	LL
Wilcock	Nov 49	Mach Des	LF, LN
Willard Batt Co	Jan 49	W33-019-ORD-6323	CE
Williams, D B, see			
Kratzer et al	May 46	SAE J1	LP
Williams, R C, see			
Griffith & Williams	Mar 45	SAE Trans	FF, MR
Wilson, see			
Bogen & Wilson	Jul 44	Pet Refiner	FF
Wilson, see			
Ethyl Corp	Oct 55	Rept ER-360	FF
Wirbitzky	Jun 53	ATZ (Ger)	CP
Withers	Dec 56	Gas & Oil Power	FF

Withrow	1956	API Proc	LL
Woody, see			
Detroit Arsenal	Jan 55	Rept 3155	CE
Woomert, D E, see			
Aberdeen Prov Gr	Nov 57	Engr Lab Rept 59	LL
Woomert, D W	Nov 61	SAE Prept	AI, FF
Wright, see			
BIOS	1947	Rept 1712	AA, AF
Wu, see			
Livengood	1958	SAE Trans	MI
Wuellner & Brannen	May 62	Lub Eng	LL, LP
Young	May 52	R & D Board Sym	AA
Young	Feb 53	Pet Eng	AA
Young, see			
Ainsley & Young	May 55	SAE J1	AA
Zherdeva et al	Feb 46	Petroleum	LP
Ziegler, see			
Newingham & Ziegler	Feb 62	Lub Eng	CF, LL
Zisman, see			
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Zisman	Feb 53	SAE J1	LP

SUBJECT INDEX

Subject Classifications

All entries are classified according to the following major and minor subject categories (the identifying two-letter symbols for the minor categories and constructed from one initial of a key word in the major category title and from one initial of a key word in the minor category title):

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- AA Priming with Auxiliary Fuels
- AE Engine Preheating
- AF Priming with Engine Fuel
- AG General
- AI Intake Air Heating
- AM Miscellaneous
- AP Glow Plugs
- AS Solids as Ignition Promoters

C CRANKING

- CA Cranking by Auxiliary Engine
- CC Solid Fuel Cartridge Cranking
- CE Electric Cranking
- CF Engine Friction
- CG General
- CH Hydraulic Cranking
- CM Miscellaneous
- CP Pneumatic Cranking
- CS Slave Units & Systems

D ACCESSORY DEVICES

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- DE Electric Heaters
- DG General
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- DS Slave Units

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- FF Fuel Performance
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- FP Fuels and Fuel Properties
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- GG General
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H HEAT TRANSFER FLUIDS (COOLANTS) AND WARMUP

- HC Coolant Specifications & Codes
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L LUBRICANTS AND LUBRICATION

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- MC Specifications & Codes
- ME Environmental and Human Factors
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- MH Heat Transfer
- MI Instrumentation
- MM Miscellaneous
- MP Piston Rings and Blowby
- MR Cycling and Continuous Running
- MT Test Facilities
- MW Wear

A STARTING AIDS

AA Priming with Auxiliary Fuels

Ainsley & Young	May 55	SAE J1	
Bentz	Jun 54	SAE J1	
BIOS	1947	Rept 1712	PB93491
Caterpillar	Nov 50	Service Mag	
CEPE (Canada)	Sep 56	Rept 1207	AD115676
Coord Res Counc	May 43	Rept 113	
DeCarolus et al	1959	SAE Trans	
Diesel Power	Mar 58	Diesel Power	
Diesel Power	Jul 58	Diesel Power	
Diesel Power	Dec 58	Diesel Power	
ERDL	Dec 57	Rept T-58-42	
Ferguson	Apr 51	Diesel Progress	
Griep	May 52	R & D Board Sym	
Meyer & DeCarolus	1962	SAE Trans	
Miller	Dec 53	SAE J1	
Nav Eng Exp Sta	Sep 53	Rept 2B271703	AD23158
Nav Eng Exp Sta	Dec 54	Rept 020002F	AD5663
NCER & E Lab	Mar 52	Tech Note N-080	AD55531
Nelson & Ulzheimer	Mar 50	SAE J1	
Oil Engine	Jul 55	Oil Engine	
Penn State U	Sep 55	DA-44-009-Eng-1041	AD87506
Penn State U	Oct 59	DA-44-009-Eng-3123	AD152889
Pitchford	Jan 55	Chart ME	
Porter	Oct 43	SAE Trans	
Schweitzer	Oct 46	Diesel Power	
Shoemaker & Gadebusch	Jan 46	Oil & Gas J1	
Sig Corp Engg Lab	Jan 52	Tech Memo 1418	TIP U22196
Walter	Nov 60	SAE J1	
Young	May 52	R & D Board Sym	
Young	Feb 53	Pet Eng	

AE Engine Preheating

Meyer et al	1959	CIMAC Proc
Ryan	May 52	R & D Board Sym
Traino	Aug 53	Aut Ind

AF Priming with Engine Fuel

BIOS	1947	Rept 1712	PB93491
Christian	Dec 56	Av Week	
Heldt	Sep 38	Auto Ind	
Kluesener	Jul 54	MTZ (Ger)	

Mech Power	Nov 61	Mech Power	
Reichhelm	Jun 55	DA-44-009-Eng-1154	AD14309
Rowland	Jun 54	SAE Jl	

AG General

Diesel Power	Mar 58	Diesel Power
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AI Intake Air Heating

Aut Ind	Apr 46	Aut Ind
Bentz	Jun 54	SAE Jl
Hirao	Mar 61	MTZ (Ger)
Meurer	1956	SAE Trans
Oil Engine	Nov 59	Oil Engine
Pelizzoni	Mar 43	SAE Trans
Shimkin	Feb 48	Aut Ind
Woomert	Nov 61	SAE Prept

AP Glow Plugs

Atwell et al	May 60	SAE Jl
Brosinsky	Feb 58	MTZ (Ger)
Design News	Feb 60	Design News
Hoffmann	Oct 57	MTZ (Ger)
Klinger	Oct 43	Aut Ind
Kluesener	Jul 54	MTZ (Ger)

AS Solids as Ignition Promoters

Penn State U	Sep 55	DA-44-009-Eng-1041	AD87506
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C CRANKING

CA Cranking by Auxiliary Engine

MTZ	Feb 56	MTZ (Ger)
MTZ	Apr 54	MTZ (Ger)

CC Solid Fuel Cartridge Cranking

Engineer	Mar 49	Engineer
Engineering	Mar 48	Engineering

CE Electric Cranking

Aut Ind	Mar 61	Aut Ind	
Berg	May 52	R & D Board Sym	
Brosinsky	Mar 60	MTZ (Ger)	
Detroit Arsenal	Jan 55	Rept 3155	AD75252
Diesel Progress	Oct 62	Diesel Progress	
Edmundson	Aug 60	SAE J1	
Gerber	May 52	R & D Board Sym	
Hoxie	Aug 52	Motorship	
Hoxie	Mar 53	Diesel Power	
Lander	May 61	SAE J1	
Little & Daily	May 43	SAE Trans	
NCER & E Lab	May 52	Tech Note N-089	AD55534
Nicad Batt Corp	Dec 57	Final Rept	AD154559
NOL Corona	Jan 58	NAVORD Rept 394	AD151995
Stefanides	Jan 62	Design News	
SW Res Inst	Dec 55	DA-23-072-ORD-836	AD79383
Willard Batt Co	Jan 49	W33-019-ORD-6323	

CF Engine Friction

Darling & Musselman	Apr 60	ASLE Trans	
Fetzer & VonEberhorst	Jul 61	ATZ (Ger)	
Georgi	1955	Wrld Pet Congr Proc	
Graves	Feb 34	SAE Trans	
Knudsen	Aug 43	SAE Trans	
Malone & Selby	1956	SAE Trans	
Meyer et al	1955	SAE Trans	
Meyer et al	1959	CIMAC Proc	
Newingham & Ziegler	Feb 62	Lub Eng	
Penn State U	Jun 54	DA-44-009-Eng-765	AD41534
Penn State U	Jun 56	DA-44-009-Eng-765	AD117757
Penn State U	Jan 59	DA-44-009-Eng-3122	AD152887
Selby	May 60	ASLE Trans	

CG General

Blose	May 55	SAE J1
Christian	May 52	R & D Board Sym

CH Hydraulic Cranking

Berger	Sep 54	J1 SLA (Fr)
Design News	Jun 61	Design News

Diesel Power	Dec 53	Diesel Power	
Mach Des	Jul 58	Mach Des	
NCEL	Dec 59	Rept 058	AD250609
NEES	Feb 55	Rept 020035	AD58250
Oil Engine	Jan 56	Oil Engine	

CM Miscellaneous

Design News	Aug 57	Design News
MTZ	Oct 56	MTZ (Ger)
Villemard	Apr 54	SIA J1 (Fr)

CP Pneumatic Cranking

Diesel Equ Spt	Feb 62	Diesel Equ Spt
Diesel Power	May 51	Diesel Power
Johannis	Apr 54	MTZ (Ger)
Koch	Nov 54	MTZ (Ger)
Ringer	May 52	R & D Board Sym
Wirbitzky	Jun 53	ATZ (Ger)

CS Slave Units & Systems

CEPE (Canada)	Sep 56	Rept 1207	AD115676
Design News	Oct 51	Design News	

D ACCESSORY DEVICES

DC Combustion Heaters

Aberdeen Prov Gr	Mar 54	Misc Rept 075	
ATB	Apr 60	ATB2-200	AD237571
Conrad et al	Jan 62	SAE J1	
Design News	Oct 57	Design News	
Detroit Arsenal	Aug 51	Rept 1150	TIPUR53263
Detroit Arsenal	Apr 61	Rept 5008	
ERDL	Aug 49	Rept 1136	
Fleck	May 52	R & D Board Sym	
Huber	Aug 51	ATZ (Ger)	
Isley	Apr 62	ASME Trans	
Koenig	Jan 62	ATZ (Ger)	
Lustig	May 52	R & D Board Sym	
MTZ	Apr 59	MTZ (Ger)	

Nav Eng Exp Sta	Oct 53	Rept 030079	AD23516
Ryan	May 52	R & D Board Sym	
Ryder	Aug 50	SAE J1	
Shimkin	Feb 48	Aut Ind	
Sieland	May 52	R & D Board Sym	
Tenney	May 52	R & D Board Sym	
Therm Res & Eng	Jun 60	DA-36-034-ORD-2727RD	
U of Wichita	Mar 54	DA-44-109-QM-982	AD205299
			AD205300
U of Wis	Dec 57	DA-44-009-Eng-2138	

DE Electric Heaters

ERDL	Aug 49	Rept 1136
Gohn	Jun 45	SAE Trans
Sieland	May 52	R & D Board Sym

DG General

NCER & E Lab	Sep 53	Tech Note N-163	AD76692
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DM Miscellaneous

Gresch & Beard	Sep 61	SAE Prept 394B
MTZ	May 57	MTZ (Ger)

F FUELS AND COMBUSTION

FF Fuel Performance

Blanc	Mar 41	Diesel Power	
Bogen & Wilson	Jul 44	Pet Refiner	
Brunner & Ruf	1959	IME(AD)Proc	
Cloud & Ferenczi	Jun 44	SAE Trans	
Derry & Evans	Jul 50	J1 Inst Pet	
Detroit Arsenal	Mar 57	Rept 3843	AD124562
Ethyl Corp	Oct 55	Rept ER-360	
Griffith & Williams	Mar 45	SAE Trans	
McLaughlin	Apr 46	SAE J1	
Miller	May 52	R & D Board Sym	
Porter	Oct 53	SAE Trans	
Riegels	Jun 50	Aut Ind	
Rixman	1941	Krftforsch (Ger)	

Ruf	Oct 57	Motorlastw (SW)
Shoemaker & Gadebusch	Jan 46	Oil & Gas J1
Smolak & Nelson	Aug 48	Pet Refiner
Tyzard & Pye	1922	Phil Mag
Vermillion	May 52	R & D Board Sym
Withers	Dec 56	Gas & Oil Power
Woomert	Nov 61	SAE Prept

FG General

Miller	Dec 53	SAE J1
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FI Ignition and Conditions for Ignition

Agnew	1961	SAE Trans	
Aut Engr	Jan 62	Aut Engr	
Baeumler	Mar 57	MTZ (Ger)	
Brosinsky	Aug 61	MTZ (Ger)	
Clarke	1961	SAE Trans	
Conrad	1941	Krftforsch (Ger)	
Hurn	May 52	R & D Board Sym	
Meurer	1956	SAE Trans	
Meurer	Jun 61	SAE J1	
Meyer & DeCarolis	1962	SAE Trans	
Penn State U	Jan 59	DA-44-009-Eng-3122	AD152887
Penn State U	Oct 59	DA-44-009-Eng-3123	AD152889
Pischinger & Pischinger	Jan 59	MTZ (Ger)	
Schaub	1941	Krftforsch (Ger)	
Tsao et al	Jan 61	SAE Prept 272B	

FP Fuels and Fuel Properties

Barbatu et al	Nov 58	Petrol si Gaze (Rum)	
Burk et al	Mar 45	SAE J1	
Chevalier	1960	PSU Thesis	
Dysart	Nov 61	SAE Prept	
Gay	1960	API Proc	
Ger Air Minist	1937		
Hammerich & Stoll	Mar 51	Erdoel & Kohle (Ger)	
Hurn	May 52	R & D Board Sym	
Kopylov & Sirotina	1962	Mosc Av Inst (Russia)	
Kroeger & Hedicke	Oct 49	Brstoff-Chem (Ger)	
McLaughlin	Apr 46	SAE J1	
Midw Res Inst	May 61	ASD Tech Rept-61-280	AD265233
Miller	May 52	R & D Board Sym	

Murphy & Saunders	May 47	Pet Refiner	
Nav Tech Miss Eur	Aug 54	Tech Rept 187-45	PB1675
NBTL	Nov 58	T-19	AD217454
Nelson	Oct 56	Oil & Gas J1	
Qualey	May 52	R & D Board Sym	
Ruf	Oct 57	Motorlastw (SW)	
Ruf	Oct 58	Motorlastw	
Tyzard & Pye	1922	Phil Mag	

FS Fuel Systems

Brunner & Ruf	1959	IME(AD)Proc	
Detroit Arsenal	Apr 58	Rept 4122	AD159230
NRC (Canada)	Nov 49	Rept MO 1490	
NRL Wash	Jan 50	Rept 3604	TIPU22695
Oil Engine	Nov 60	Oil Engine	
Roensch	Aug 43	SAE Trans	
Ruf	Oct 58	Motorlastw	
Straetmanns & Jenkinson	Mar 59	Erdoel & Kohle (Ger)	
U of Minn	Mar 54	DA-44-009-Eng-1042	

G GENERAL

GB Bibliographies

ASTIA	56/58	Biblio	AD29634
ERDL	Jul 56	Proj 8-49-13-102	
Lib Congr	56/57	Polar Biblio	AD109388
Nat Res Coun Can	Jul 52	Rept MP-9	AD97
Penn State U	1961	DA-36-034-ORD-3199RD	
SW Res Inst	Apr 56	DA-23-072-ORD-836	AD92602

GG General

Call	Jun 52	SAE Prept 773	
Cummings	Feb 43	SAE J1	
Detroit Arsenal	Apr 44		
ERDL	Jul 58	Rept 1534 TR	AD202217
Espenschade et al	Oct 52	SAE Trans	
Gadebusch	May 52	R & D Board Sym	
Garrett	Oct 52	SAE Trans	
Graves	Apr 52	Diesel Power	
Greathouse	Jun 58	SAE J1	
Harbeck	Oct 60	SAE Prept	

Heldt	1953	Book
Horine	Jul 56	Diesel Progress
Kirkby	May 52	R & D Board Sym
Prothero	Oct 60	SAE Prept
Shaw	Dec 60	SAE J1
Smith	1959	Comb Eng Prog
Stinson	1959	Diesel Publ

GM Miscellaneous

Lurken	Dec 58	SAE J1
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GR Summary Reports

Aberdeen Prov Gr	Aug 59	DPS Rept 509	AD225294
Austen & Lyn	59/60	IME(AD)Proc	
ERDL	Nov 56		AD128601
Goodale	Jun 44	SAE Trans	
Goodale	May 47	SAE J1	
Jones & Weider	Apr 44	SAE J1	
Kilty et al	Feb 53	SAE J1	
NCER & E Lab	Oct 51	Tech Note N-0(66)	AD43003
Powell	Jan 50	Ordnance	
R & D Board	May 52	Sym Proc	
Russell	Jun 60	Austr Engr	
SAE CIMTC Sub XV	Dec 56	SAE J1	
VonEberhorst	1959	Wrld Pet Congr Proc	

GS Surveys

Atl Res Corp	Sep 49	N9onr-86401	
Blose	Apr 52	SAE J1	
ERDL	Feb 48	Rept 1035	
ERDL	Jul 56	Proj 8-49-13-102	
Heldt	May 43	Aut Ind	
Hiller	36/37	Z VDI (Ger)	
Levin & Ogloblin	1952	ATIC-293047	AD146957
Nat Res Coun Can	Jul 52	Rept MP-9	AD97
Penn State U	Oct 59	DA-36-061-ORD-610	
Sloan et al	Jun 51	SAE J1	
SW Res Inst	Apr 56	DA-23-072-ORD-836	AD92602

H HEAT TRANSFER FLUIDS (COOLANTS) AND WARMUP

HG General

Seifert Mar 59 MTZ (Ger)

HP Coolants and Coolant Properties

Aberdeen Prov Gr	Jun 55	Lab Ser Rept 251	AD111150
Aberdeen Prov Gr	Mar 56	Engr Lab Rept 21	AD111250
Aberdeen Prov Gr	Jan 58	Rept CCL 44	AD153309
Bukowiecki	Mar 61	ATZ (Ger)	
Kluesener	Oct 61	ATZ (Ger)	
Murphy et al	Jul 49	ASME Trans	

HS Cooling Systems

U of Minn Mr 54 DA-44-009-Eng-1042

L LUBRICANTS AND LUBRICATION

LD Dilution (Intentional)

Arter	May 49	Scie Lub	
Barron	Jul 51	SAE J1	
Geniesse	Feb 43	SAE J1	
Miller	May 52	R & D Board Sym	
Rock Isld Arsl	Jul 53	Lab Rept 53260	AD14535
Wenck	Jan 49	ATZ (Ger)	

LF Fundamentals of Lubrication

Beaubien & Cattaneo	Oct 46	SAE J1	
Cavlin et al	Oct 53	Ind & Eng Chem	
Horowitz et al	1959	Wrld Pet Congr Proc	
Kluesener	Apr 57	MTZ (Ger)	
Kollmann & Hockel	May 53	MTZ (Ger)	
Oil Engine	Jan 60	Oil Engine	
Rogowski	Aug 61	SAE J1	
Shaw & Nussdorfer	1946	NACA TR850	
Wilcock	Nov 49	Mach Des	

LG General

Arter	May 49	Scie Lub
Beck	May 58	ASME 580GP1
Boldt & Mougey	Jun 54	SAE J1
Bullard	Apr 53	Scientific Lub
Georgi	1950	Reinhold
Lyman & Kavanagh	1959	Proc API III
Miller	Dec 53	SAE J1
Mougey	May 52	R & D Board Sym
Pratt	1959	IME(AD)Proc

LL Lubricant Performance

Aberdeen Prov Gr	Nov 57	Engr Lab Rept 59	AD147897
Brosinsky	Mar 60	MTZ (Ger)	
Brunner	Jul 58	ATZ (Ger)	
Calif Res Corp	Jun 57	DA-44-009-Eng-2789	
Darling & Musselman	Apr 60	ASLE Trans	
Fetzer & VonEberhorst	Jul 61	ATZ (Ger)	
Fischl et al	1956	SAE Trans	
Fleming et al	Jun 50	SAE J1	
Horowitz & Vick	1962	SAE Trans	
Kohl & Skoglund	Oct 61	ASTM-API Symp	
Lane & Chatfield	Sep 49	SAE J1	
Malone & Selby	1956	SAE Trans	
Meyer et al	1955	SAE Trans	
Miller	May 52	R & D Board Sym	
Newingham & Ziegler	Feb 62	Lub Eng	
Okrent	Apr 61	ASLE Trans	
Penn State U	Aug 48	NOrd 7948	TIPUR862
Pratt	1959	IME(AD)Proc	
Raviolo	Apr 50	SAE Trans	
Schwaiger	1937	Oel & Kohle (Ger)	
Selby	1958	ASLE Trans	
Selby et al	Nov 61	SAE Prept	
Semenido et al	1960	NTS (Russia)	
Wexler	May 52	R & D Board Sym	
Withrow	1956	API Proc	
Wuellner & Brannen	May 62	Lub Eng	

LN Greases & Noncirculated Lubricants

Wilcock	Nov 49	Mach Des
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LP Lubricants and Lubricant Properties

Armour Res	1949	AF 33(038)1644	ATI69718
BIOS	Oct 47	Rept 1610	ATI21837
Crouch & Cameron	Sep 61	Inst Pet J1	
Ellis	Aug 57	Petroleum	
Fleming et al	Jun 50	SAE J1	
Foreman	1955	ASTM Bull	
Georgi	1955	Wrld Pet Congr Proc	
Ger Air Minist	1937		
Hammerich	Jan 57	Brstoff-Chem (Ger)	
Henderson	Sep 43	Oil & Gas J1	
Holder	Apr 50	Brstoff-Chem (Ger)	
Horowitz	1958	Ind Eng Chem	
Horowitz & Vick	1962	SAE Trans	
Jones & Tyson	Jun 52	J1 Coleoid Sci	
Kratzer et al	May 46	SAE J1	
Kroeger & Hedicke	Oct 49	Brstoff-Chem (Ger)	
Lieber	Mar 46	Lub Eng	
Miller & Galindo	Apr 53	SAE J1	
Moyer	Apr 62	Lub Eng	
Murphy et al	Jul 49	ASME Trans	
Murphy & Saunders	May 47	Pet Refiner	
Penn State U	Aug 48	NOrd 7948	TIPUR862
Porter & Johnson	Aug 61	ASNE J1	
Schrock & Starkman	Jul 57	Lub Eng	
Schwaiger	1937	Oel & Kohle (Ger)	
Selby	1958	ASLE Trans	
Semenido et al	1960	NTS (Russia)	
Wuellner & Brannen	May 62	Lub Eng	
Zherdeva et al	Feb 46	Petroleum	
Zisman	Feb 53	SAE J1	

LS Lubrication Systems

Barron	Jul 51	SAE J1	
Moyer	Apr 62	Lub Eng	
Nav Eng Exp Sta	Dec 54	Rept 020002F	AD5663
U of Minn	Mar 54	DA-44-009-Eng-1042	

M MISCELLANEOUS

ME Environmental and Human Factors

Beal	Dec 50	SAE J1
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MG General (Incl Engine Performance in Vehicles)

Aberdeen Prov Gr	May 58	Engr Lab Rept 71	AD201959
Aberdeen Prov Gr	Aug 61	Rept DPS/OTA-95	AD262689
ATB	May 60	ATB2859	AD238609
Royal Can Af	Aug 56	CEPE Rept 1202	
SAE CIMTC Sub XV	Aug 60	Rept 4	
Scie Lubr	Jun 58	Scie Lubr	
SW Res Inst	May 61	DA-23-072-ORD-1221	

MH Heat Transfer

Baeumler	Mar 57	MTZ (Ger)	
Conrad	1941	Krftforsch (Ger)	
Eichelberg	1939	Engg	
Mertz	Jun 60	PSU Thesis	
Overbye et al	1961	SAE Trans	

MI Instrumentation

Agnew	1961	SAE Trans	
Burrows et al	1961	SAE Trans	
Chen et al	1954	SAE Trans	
CRC	Mar 60	CRC Publ 347	
Livengood	1958	SAE Trans	
Penn State U	Jan 59	DA-44-009-Eng-3122	AD152887
Tsao et al	Jan 61	SAE Prept 272B	

MM Miscellaneous

Bryan et al	1961	SAE Trans	
Davis et al	1961	SAE Trans	
SAE ISTC	May 59	SAE HS-169	

MP Piston Rings and Blowby

Beaubien & Cattaneo	Oct 46	SAE J1	
Rogowski	Aug 61	SAE J1	
Schaub	1941	Krftforsch (Ger)	
Shaw & Nussdorfer	1946	NACA TR850	

MR Cycling and Continuous Running

Blose	Apr 52	SAE J1	
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Detroit Arsenal
Griffith & Williams

Apr 58
Mar 45

Rept 4200
SAE Trans

AD203731

MT Test Facilities

Aberdeen Prov Gr
Arter
Cline
Diesel Progress
Espenschade
Groth

Apr 60
May 49
Feb 62
Mar 56
Apr 55
Dec 58

Engr Lab Rept 106
Scie Lub
Aut Ind
Diesel Progress
SAE Jl
MTZ (Ger)

MW Wear

Baist
Calif Res Corp
Groth
Jackson
Kunc et al
Mueller
Okrent
Thiery

Jan 62
Jun 57
Oct 55
1953
Sep 52
May 59
Apr 61
Oct 59

Erdol & Kohle
DA-44-009-Eng-2789
MTZ (Ger)
SAE Trans
Pet Processing
Chem-Ing (Ger)
ASLE Trans
Scie Lub

ABBREVIATIONS

General

Arsl	Arsenal
Biblio	Bibliography
Engg	Engineering
Engr	Engineer
Jl	Journal
Lab	Laboratory
Misc	Miscellaneous
Mag	Magazine
Prept	Preprint
Proc	Proceedings
Proj	Project
Publ	Publication
Rept	Report
Res	Research
Ser	Service
Sub	Subcommittee
Sym	Symposium
Tech Note	Technical Note
Trans	Transactions
U	University
Z	Zeitschrift (German for Journal)

Names

AITC	Air Technical Intelligence Center
API	American Petroleum Institute
ASLE	Journal of the American Society of Lubrication Engineers (short title: Lubrication Engineering)
ASME	American Society of Mechanical Engineers
ASNE	American Society of Naval Engineers
ASTIA	Armed Service Technical Information Agency
ATB	US Army Arctic Test Board
ATZ	Automobiltechnische Zeitschrift (German Journal)
Austr Engr	The Australasian Engineer (Australian Journal)
Aut Engr	The Automobile Engineer (British Journal)
Aut Ind	Automobile Industries (US Journal)
Av Week	Aviation Week (US Journal)
BIOS	British Intelligence Objectives Subcommittee
Brstoff-Chem	Brennstoff-Chemie (German Journal)

CEPE	Central Experimental & Proving Establishment (Canada)
Chem Ing	Chemie-Ingenieur-Technik (German Journal)
CIMAC	International Congress of Combustion Engines
Comb Eng Prog	Combustion Engine Progress (British Publication)
CRC	Coordinating Research Council
Diesel Equ Spt	Diesel Equipment Superintendent (formerly: Diesel Power, US Journal)
ERDL	US Army Engineer Research and Development Laboratories
Ger Air Minist	German Air Ministry
IME(AD)	Automobile Division of The Institution of Mechanical Engineers (Britain)
Ind & Eng Chem	Industrial and Engineering Chemistry (US Journal)
Inst Pet	Institute of Petroleum (British Professional Society)
Krftforsch	Kraftfahrtforschung (German Journal)
Lib Congr	Library of Congress
Lub Eng	Lubrication Engineering (US Journal)
Mach Des	Machine Design (US Journal)
Mech Power	Mechanical Power (formerly Gas & Oil Power)
Mosc Av Inst	Moscow Aviation Institute (Russia)
Motorlastw	Motorlastwagen-L'Autocamion (Swiss Journal)
MTZ	Motortechnische Zeitschrift (German Journal)
NACA	National Advisory Committee for Aeronautics (Now: NASA)
NASA	National Aeronautics and Space Administration
Nav Tech Miss Eur	US Naval Technical Mission in Europe
NBTL	US Naval Boiler & Turbine Laboratory
NCEL	US Naval Civil Engineering Laboratory; Port Hueneme, Calif.
NCER & E Lab	US Naval Civil Engineering Research and Evaluation Laboratory; Port Hueneme, Calif.
NEES	US Naval Engineering Experiment Station; Annapolis, Maryland
NOL	US Naval Ordnance Laboratory; Corona, Calif.
NRC (Canada)	National Research Council of Canada
NRL	US Naval Research Laboratory; Washington, D. C.

Oil Engine	The Oil Engine & Gas Turbine (British Journal)
Pet Refiner	Petroleum Refiner (Since May 61: Hydrocarbon Processing & Petroleum Refiner)
Phil Mag	The Philosophical Magazine (British Journal)
R & D Board Sym	Symposium on Problems Related to Starting Diesel Engines at Low Temperatures Sponsored by the Armed Forces Research and Development Board
Rock Island Arsl Royal Can Af	US Army Ordnance, Rock Island Arsenal Royal Canadian Air Force
SAE	Society of Automotive Engineers
SAE CIMTC Sub XV	Subcommittee XV of Winterization of the Construction and Industrial Machinery Committee of the Society of Automotive Engineers
SAE ISTC	Iron & Steel Technical Committee of the Society of Automotive Engineers
Scie Lubr	Scientific Lubrication (British Journal)
SIA	Societe des Ingenieurs de l'Automobile (French Society of Automotive Engineers)
Sig Corp Engg Lab	US Army Signal Corps Engineering Laboratories
Wrld Pet Congr	World Petroleum Congress
Z VDI	Zeitschrift des VDI (Journal of the German Society of Engineers)

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